

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED / ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371		ATTORNEY'S DOCKET NUMBER P67528US0
		US APPLICATION NO. (if known, see 37 CFR 1.5) 10/019464
INTERNATIONAL APPLICATION NO. PCT/RU00/00267	INTERNATIONAL FILING DATE 30 June 2000	PRIORITY DATE CLAIMED 30 June 1999
TITLE OF INVENTION MEDICAL FABRIC WITH VIRUCIDAL AND ANTIMICROBIAL ACTION AND ARTICLES THEREFROM		
APPLICANT(S) FOR DO/EO/US 1) Zinaida Yulianovna KOZINDA, 2) Yelena Grigoryevna SUVOROVA, 3) Mikhail Vasilyevich STRUKOV 4) Aleksandr Vladimirovich SEDOV 5) Sergei Fedorovich GONCHAROV		

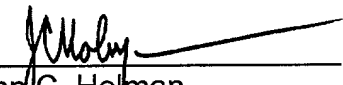
Applicant herein submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information.

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for Internatl. Preliminary Examination was made by the 19th month from earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☒ has been transmitted by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US)
6. ☒ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ have been transmitted by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☒ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ A translation of the annexes to the Internatl. Preliminary Examination report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern other document(s) or information included:

11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A **FIRST** preliminary amendment.
☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information:

International Search Report – Russian Patent Office
First Page of Publication

US APPLICATION NO. (If known, see 37 CFR 1.51) <div style="font-size: 1.5em; font-weight: bold;">10/019464</div>		INTERNATIONAL APPLICATION NO. <div style="font-weight: bold;">PCT/RU00/00267</div>		ATTORNEY'S DOCKET NUMBER <div style="font-weight: bold;">P67528US0</div>	
17. <input checked="" type="checkbox"/> The following fees are submitted: Basic National Fee (37 CFR 1.492(a)(1)-(5)): Internatl. prelim. examination fee paid to USPTO (37 CFR 1.492 (a) (1)) .. \$710.00 No international preliminary examination fee paid to USPTO (37 CFR 1.492 (a) (2)) but international search fee paid to USPTO (37 CFR 1.445(a)(2)) .. \$740.00 Neither international preliminary examination fee (37 CFR 1.492 (a) (3)) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO) \$1040.00 International preliminary examination fee paid to USPTO (37 CFR 1.492 (a) (4)) and all claims satisfied provisions of PCT Article 33(2)-(4) \$100.00 Search Report prepared by the EPO or JPO (37 CFR 1.492 (a) (5)) \$890.00 <div style="text-align: right;">ENTER APPROPRIATE BASIC FEE AMOUNT =</div>				CALCULATIONS \$ 1040.00	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input checked="" type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$ 130.00	
Claims	Number Filed	Number Extra	Rate		
Total Claims	5 - 20 =	-0-	x \$18.00	\$	
Independent Claims	2 - 3 =	-0-	x \$84.00	\$	
Multiple Dependent Claim(s) (if applicable)			+ \$280.00	\$	
TOTAL OF ABOVE CALCULATIONS =				\$ 1170.00	
Reduction by 1/2 for filing by small entity , if applicable. Verified Small Entity statement must also be filed. (Note 37 CFR 1.9, 1.27, 1.28).				\$	
SUBTOTAL =				\$ 1170.00	
Processing fee of \$130 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f))				\$	
TOTAL NATIONAL FEE =				\$ 1170.00	
Fee of \$40.00 for recording the enclosed assignment (37 CFR 1.21(h)). Assignment must be accompanied by appropriate cover sheet (37 CFR 3.28, 3.31).				\$	
TOTAL FEES ENCLOSED =				\$ 1170.00	
				Amt. to be refunded:	\$
				Amt. charged:	\$
a. <input checked="" type="checkbox"/> A check in the amount of \$ <u>1170.00</u> to cover the above fees is enclosed. b. <input type="checkbox"/> Please charge my Deposit Account No. <u>06-1358</u> in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed. c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge my account any additional fees set forth in §1.492 during the pendency of this application, or credit any overpayment to Deposit Account No. <u>06-1358</u> . A duplicate copy of this sheet is enclosed.					
SEND ALL CORRESPONDENCE TO:					
JACOBSON HOLMAN PLLC 400 7th Street, N.W., Suite 600 Washington, DC 20004 202-638-6666 CUSTOMER NUMBER: 00136			By  John C. Holman Reg. No. 22,769		

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Zinaida Yulianovna KOZINDA et al
Serial No.: New
Filing Date: December 31, 2001
For: MEDICAL FABRIC WITH VIRUCIDAL AND ANTIMICROBIAL ACTION
AND ARTICLES THEREFROM

PRELIMINARY AMENDMENT

Assistant Commissioner of Patents
Washington, D.C. 20231

Sir:

Prior to initial examination, please amend the above-identified application as follows:

IN THE SPECIFICATION

Please insert the following sentence on line 1, immediately following the title:

--This is a nationalization of PCT/RU00/00267, filed June 30, 2000 and published in Russian.--

REMARKS

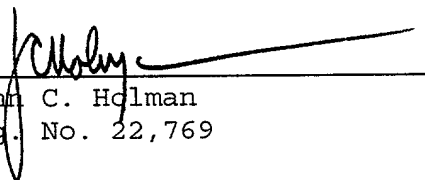
The foregoing Preliminary Amendment is requested in order to place the examination in better form for examination.

Early action on the merits is respectfully requested.

Respectfully submitted,

JACOBSON HOLMAN PLLC

By


John C. Holman
Reg. No. 22,769

400 Seventh Street, N.W.
Washington, D.C. 20004-2201
(202) 638-6666
Atty. Docket: P67528US0
Date: December 31, 2001
JCH:jrc

MEDICAL FABRIC WITH VIRUCIDAL AND
ANTIMICROBIAL ACTION AND ARTICLES THEREFROM

The present invention relates to the field of medicine, namely, to prevention and prophylaxis of infection/inflammatory diseases caused by impact of adverse microbiological factors, by means of providing a medical material and products made therefrom having virucidal and antimicrobial activity.

Clothes, personal hygiene articles such as bed-linen, towel, diapers, napkins, gloves, hosiery, etc., having antimicrobial activity are requisite not only in medical institutions, such as hospitals, burn centres, maternity hospitals, in emergency situations, in cases of epidemics, but also in household. In household, these articles are used as prophylactic means reducing the possibility of falling ill and relapse occurrences. For workers of medical institutions these article are requisite for diminishing the danger of spreading in-hospital infection, being in a prolonged position at the working place without the possibility to change the clothes, as articles from antimicrobial material are conducive to disruption of epidemical path of disease transfer through human clothes, as well as to prevent repeated autoinfection.

An antimicrobial material comprising a base of natural fibres and sanguiritrine which is used both in medicine and in sanitary. The method for producing this material, comprising impregnating the natural fibres with sanguiritrine and subsequent drying it. (USSR author's certificate 1771750, Cl. A 61 L 15/00, 30.10.1992).

However, these modifications do not possess antimicrobial activity to a vast group of microorganisms and fungi and fail to retain their properties after washing.

The known materials have antimicrobial activity with respect to gram-positive, gram-negative microorganisms and fungi, including viruses/infection agents not having cellular structure and being distinguished by extremely small sizes and capable to pass through bacteria retaining filters and pertaining to dressing.

The technical solution closest to the claimed one is the textile material having antimicrobial activity and made from bactericidal fibres of 3,4,4-trichlorocarbanilide, tin-organic compounds and hexachlorophene. This material is intended for clothes and underwear sewing. However, these materials are toxic which does not make it possible to employ them as a prophylactic antimicrobial material, and they have a narrow activity range. (USSR author's certificate 317660, Cl. A 61 L 15/00, 19.10.1971).

The object of the present invention is providing a material and personal hygiene articles made from it that would have biological activity with respect of a number of gram-positive, gram-negative groups, pathogenic fungi and with respect to group F/RK/8/34 microvirues, eteroviruses (type III polyomyelitis and A hepatitis) without any toxic effect on the human organism and laundry-resistant.

This objet is achieved by manufacturing the article (clothes, personal hygiene articles such as bed-linen, towel, diapers, napkins, gloves, hosiery, etc.) from a fabric containing a sorbed or fabric chemically associated biologically active agent, a quadruple ammonium base with 10-18 carbon atoms, Catamin AB and polyatomic alcohol with the component wt. % ratio of:

Catamin AB - 0.06-0.075

Polyatomic alcohol - 0.03-0.038

Catamin AB, alkyldimethylbenzyl ammonium chloride (synonym, Rockal) is an antiseptic and relates to cationic surfactants. $[R(CH_3)_2(CH_2C_6H_5)N]^+Cl^-$ R-mixture of $C_{10}H_{21}$ - $C_{18}H_{37}$ or $C_{12}H_{25}$ - $C_{14}H_{29}$ straight-chain alkyl groups. Medium molar weight of Catamin AB is 361 ± 15 g/mole. Technical specification TU 2482-012-1316 4401-94.

Cotton, wool, polyamide, mixed fibre materials and other materials used in medicine may serve as the material.

Embodiment 1 of the Invention

Cotton fabric is periodically treated with a 0.9% antiseptic Catamin AB aqueous solution of the solids weight in the presence of 0.038% of polyatomic alcohol. Sorption is carried out during a time period of more than 30 minutes. After which the material produced is dried. Whereby concentration of the sorbed active substance is about 0.06% of the material weight.

Embodiment 1 of the Invention

Woollen fabric is treated according to operation of the method described in Embodiment 1, whereby antiseptic is used in concentration of 1.5% of solids weight, the polyatomic alcohol is in the amount of 0.038%. Concentration of the active sorbed substance on the material is 0.075% of the material weight.

Embodiment 3 of the Invention

Polyamide fabric is treated with Catamin AB 1.2% and polyatomic alcohol 0.035% aqueous solution periodically for 60 minutes, followed by drying the material produced. Concentration of Catamin AB was 0.07% of the material weight.

Examples of producing and properties of the material are provided in the table.

The material produced is used to manufacture articles such as clothes, personal hygiene items, bed-linen, towel, diapers, napkins gloves, hosiery, etc.

This material has no toxic effect on humans, does not affect human immune system, promotes more rapid curing of the patient and prevents disease relapses, which is supported by its use in burn centres and by prophylactic use under household conditions.

Ten patients having II and III degree burns were being cured on cots provided with sheets made from this material. Observations have shown that epidermis recovery occurs after 10-12 days. Healing is without secondary stretching.

When using medicinal gloves and socks made from this material, after nail removal in treating nail mycosis, a significant relapse reduction (down to 75%) was observed as well as accelerated recovery of nail bed epidermis.

The use of antimicrobial clothes in clinics by medical personnel 2-4 times reduces seeding of smocks, suits and other clothes. Thus, it enhances protection of medical personnel against microbial factor and prophylaxis of in-hospital infections.

Thus, articles manufactured from this material are capable of speeding-up the process of curing patients having diseases caused by a number of gram-positive and gram-negative groups of microorganisms, pathogenic fungi, as well of acting prophylactically when there exists the possibility of their proliferation.

2019.04.04

Table

	catamin content % of material weight	Area of inhibition of organism growth, mm					
		golden staphylococcus		Colon bacillus		Yeast fungi	
		before washing	after 15 washings	before washing	after 15 washings	before washing	after 15 washings
cotton							
1	0,06	4	4	2,5	1,5	2,5	2
2	0,065	5,5	5	2,5	2	3	3
3	0,07	6,5	6	3,5	3	3,5	3
4	0,075	7	7	4,5	4	4	3,5
wool							
1	0,06	4	3,5	2,5	2	2,5	2,5
2	0,065	5	4,5	3	2,5	3	2,5
3	0,07	6,5	6	3,5	3	4	3,5
4	0,075	7,5	7	4	3,5	4	4
polyamide							
1	0,06	4	3,5	2,5	1,5	2,5	2
2	0,065	4	3	3	2,5	3	2,5
3	0,07	4,5	4	3,5	3	3,5	3
4	0,075	5	5	4,5	4	4	4
cotton 50% - polyamide 50%							
1	0,06	4,0	3,50	2,5	2,0	2,5	2,0
2	0,065	4,5	4,00	2,7	2,5	3,0	2,5
3	0,07	5,0	4,50	3,0	3,0	3,5	3,0
4	0,075	6,0	5,00	4,0	3,5	4,0	3,5
cotton 50% - polyester 50%							
1	0,06	3,0	3,0	2,5	1,5	2,0	1,5
2	0,065	3,6	3,5	2,5	2,0	2,0	2,0
3	0,07	4,0	3,5	3,0	2,0	2,5	2,0
4	0,075	4,2	4,0	3,0	2,5	3,5	2,5
wool 50% - polyamide 50%							
1	0,06	4,0	3,5	2,5	2,0	2,0	2,0
2	0,065	4,5	3,5	3,0	2,0	2,0	2,0
3	0,07	5,0	4,0	3,5	2,5	3,5	3,0
4	0,075	5,5	4,5	4,0	3,0	4,0	3,0

CLAIMS

1. A medical material on the base of natural fabrics with an antimicrobial substance, characterised in that it comprises, as the antimicrobial substance, a quadruple ammonium base having 10-18 carbon atoms, Catamin AB, and polyatomic alcohol with the following component ratio, wt. % of the material weight:

Quadruple ammonium base having 10-18 carbon atoms,

Catamin AB	- 0.06-0.75
------------	-------------

Polyatomic alcohol	- 0.03-0.038
--------------------	--------------

2. An article made from a medical material on the base of natural fabrics with an antimicrobial substance, characterised in that it comprises, as the antimicrobial substance, a quadruple ammonium base having 10-18 carbon atoms and polyatomic alcohol with the following component ratio, wt. % of the material weight:

Quadruple ammonium base having 10-18 carbon atoms,

Catamin AB	- 0.06-0.75
------------	-------------

Polyatomic alcohol	- 0.03-0.038
--------------------	--------------

3. An article according to claim 2, characterised in that it is formed as surgical articles such as surgical sheets, surgical clothes, mask, covers.
4. An article according to claim 2, characterised in that it is formed as private hygiene articles such as bed-linen, towel, diapers, gloves, hosiery.
5. An article according to claim 2, characterised in that it is formed as underwear.

ABSTRACT

The invention relates to the field of medicine, namely, to prevention and prophylaxis of infection/inflammatory diseases caused by impact of adverse microbiological factors, by means of providing a medical material and products made therefrom having virucidal and antimicrobial activity.

The medical material on the basis of natural fabrics with an antimicrobial substance as the antimicrobial substance comprises a quadruple ammonium base having 10-18 carbon atoms, Catamin AB, and a polyatomic alcohol, with the following component ratio, wt. % of the material weight:

Quadruple ammonium base having 10-18 carbon atoms,

Catamin AB	- 0.06-0.75
Polyatomic alcohol	- 0.03-0.038

10019464-040402

DECLARATION AND POWER OF ATTORNEY U.S.A.

FOR ATTORNEYS' USE ONLY
ATTORNEYS' DOCKET NO.

ALL PATENTS, INCLUDING DESIGN
FOR APPLICATION BASED ON PCT, PARIS CONVENTION;
NON PRIORITY; OR PROVISIONAL APPLICATIONS

As a below named inventor, I declare that my residence, post office address and citizenship are stated below next to my name, the information given herein is true, that I believe that I am the original, first and sole inventor (if only one name is listed at 201 below), or an original, first and joint inventor (if plural inventors are named below at 201-203, or on additional sheets attached hereto) of the subject matter which is claimed and for which patent is sought on the invention entitled:

"Medical fabric with virucidal and antimicrobial action and articles therefrom"

which is described and claimed in: ☒ PCT International Application No. PCT/RU00/00267 filed 30 June 2000
☐ the attached specification ☐ the specification in application Serial No. _____ filed _____
(If applicable) and amended on _____

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 (a)-(d) of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

99113369 RUSSIA 30 June 1999
(Number) (Country) (Day/Month/Year Filed)

(Number) (Country) (Day/Month/Year Filed)

(Number) (Country) (Day/Month/Year Filed)

Priority Claimed

☒ Yes ☐ No

☐ Yes ☐ No

☐ Yes ☐ No

I hereby claim the benefit under Title 35, United States Code, §119(e) of any United States provisional application(s) listed below:

Application No. _____ Filing Date _____ Application No. _____ Filing Date _____

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.)

(Filing Date)

(Status: patented, pending, abandoned)

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorneys (Registration No.) to prosecute this application, receive and act on instructions from my agent, and transact all business in the Patent and Trademark Office connected therewith. HARVEY S. JACOBSON, JR. (20,851); JOHN CLARKE HOLMAN (22,769); MARVIN R. STERN (20,640); ALLEN S. MELSER (27,215); MICHAEL R. SLOBASKY (26,421); JONATHAN L. SCHERER (29,851); IRWIN M. AISENBERG (19,007); WILLIAM E. PLAYER (31,409); YOON S. HAM (45,307) and NATHANIEL A. HUMPHRIES (22,772)

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or

JACOBSON HOLMAN
PROFESSIONAL LIMITED LIABILITY COMPANY
400 SEVENTH STREET, N.W.
WASHINGTON, D.C. 20004

DIRECT TELEPHONE CALLS TO:

(please use Attorney's Docket No.) (202) 638-6666

JACOBSON HOLMAN
PROFESSIONAL LIMITED LIABILITY COMPANY

*Inventor(s) name must include at least one unabbreviated first or middle name.

FULL NAME * OF INVENTOR	FAMILY NAME <u>Kozinda</u>	GIVEN NAME <u>Zinaida</u>	MIDDLE NAME <u>Yulianovna</u>
RESIDENCE & CITIZENSHIP	CITY <u>Moscow</u>	STATE OR FOREIGN COUNTRY <u>RUSSIA</u>	COUNTRY OF CITIZENSHIP <u>RUSSIA</u>
POST OFFICE ADDRESS	POST OFFICE ADDRESS <u>Volokolamskoye Shosse, d.6, kv. 249</u>	CITY <u>Moscow</u>	STATE OR COUNTRY <u>RUSSIA</u> ZIP CODE <u>125080</u>
FULL NAME * OF INVENTOR	FAMILY NAME <u>Suvorova</u>	GIVEN NAME <u>Yelena</u>	MIDDLE NAME <u>Grigoryevna</u>
RESIDENCE & CITIZENSHIP	CITY <u>Moscow</u>	STATE OR FOREIGN COUNTRY <u>RUSSIA</u>	COUNTRY OF CITIZENSHIP <u>RUSSIA</u>
POST OFFICE ADDRESS	POST OFFICE ADDRESS <u>13 Parkovaya, d. 37, k. 1, kv. 13</u>	CITY <u>Moscow</u>	STATE OR COUNTRY <u>RUSSIA</u> ZIP CODE <u>105215</u>
FULL NAME * OF INVENTOR	FAMILY NAME <u>Strukov</u>	GIVEN NAME <u>Mikhail</u>	MIDDLE NAME <u>Vasilyevich</u>
RESIDENCE & CITIZENSHIP	CITY <u>Moscow</u>	STATE OR FOREIGN COUNTRY <u>RUSSIA</u>	COUNTRY OF CITIZENSHIP <u>RUSSIA</u>
POST OFFICE ADDRESS	POST OFFICE ADDRESS <u>ul. 50-let VLKSM, d. 4, kv. 7</u>	CITY <u>g.Korolev, Moskov.obl.</u>	STATE OR COUNTRY <u>RUSSIA</u> ZIP CODE <u>141070</u>

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under section 1001 of Title 18 of the United States Code; and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

SIGNATURE OF INVENTOR 201*	SIGNATURE OF INVENTOR 202*	SIGNATURE OF INVENTOR 203*
DATE <u>11.02.02</u>	DATE <u>11.02.02</u>	DATE <u>12.02.02</u>

☒ Additional inventors are named on separately numbered sheets attached hereto.

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"Medical fabric with virucidal and antimicrobial action and articles therefrom"

which is described and claimed in: ☒ PCT International Application No. PCT/RU00/00267 filed 30 June 2000
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Priority Claimed

☒ Yes ☐ No

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(Application Serial No.)

(Filing Date)

(Status: patented, pending, abandoned)

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RESIDENCE & CITIZENSHIP	CITY	STATE OR FOREIGN COUNTRY	COUNTRY OF CITIZENSHIP
POST OFFICE ADDRESS	POST OFFICE ADDRESS	CITY	STATE OR COUNTRY
			ZIP CODE
FULL NAME * OF INVENTOR	FAMILY NAME	GIVEN NAME	MIDDLE NAME
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			ZIP CODE

further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under section 1001 of Title 18 of the United States Code; and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

GNATURE OF INVENTOR 204*	SIGNATURE OF INVENTOR 205*	SIGNATURE OF INVENTOR 206*
DATE 12.02.02	DATE 12.02.02	DATE

[Additional inventors are named on separately numbered sheets attached hereto.